**Key Concepts:**

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| * carbohydrates: monosaccharide; supplier of energy and dietary fiber; structural component of cells: cell wall, cellulose |
| * DNA: double helix, storage of genetic material |
| * inorganic, organic molecule |
| * lipids: component of cell membranes; stored energy supply |
| * minerals |
| * nucleic acids: nucleotide (sugar, phosphate, and nitrogen bases) |
| * pH |
| * proteins: organic molecule; amino acids; structural and functional role, enzymes |
| * RNA: single strand |
| * vitamins C – wound healing, K – blood clotting, D – bone growth * water: polarity, density, and solvent properties |
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Objectives: Student will be able to:

* **Describe the structure of a carbohydrate and explain how**

**the body uses carbohydrates by completing a Tree Map.**

* **Compare the structure and functions of lipids and**

**proteins by creating models and constructing a Double**

**Bubble Map.**

* **Compare the roles of specific vitamins by creating a**

**Thinking Map.**

* **Compare the basic structures of nucleic acids by**

**analyzing diagrams of DNA and RNA and generating**

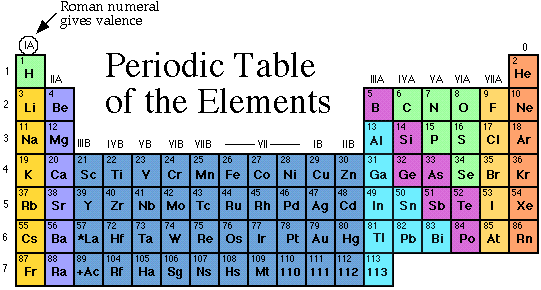
**models.**

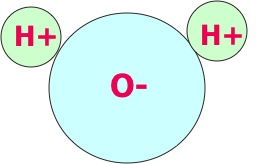
* **Explain why water is classified as a polar molecule by**

**diagramming and explaining its structure.**

* **Explain how the density of water affects living organisms.**
* **Classify substances according to their pH by collecting**

**and analyzing data.**





Pertinent Information:

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| **“Big” Ideas** | Organisms use macromolecules for growth, repair and energy.  Water has unique properties because it is a polar molecule. |
| **Essential Question** | How can we apply our knowledge of macromolecules and chemical compounds to enhance our quality of life? |
| **Enduring Understanding** | Organisms use carbohydrates for energy, dietary fiber and cell structure.  Organisms use lipids/fats for long-term energy storage and cell structure.  Proteins are involved in most cellular activities. Organisms use them in growth and repair.  Vitamins and minerals are needed in small amounts for healthy living.  Water has unique properties because it is a polar molecule. |

Notes: